United States Department of the Interior

Bureau of Land Management

Environmental Assessment

DOI-BLM-UT-C030-2023-0007-EA

Case Number: UTU-95750

January 2023

Pulsipher-New Harmony Access Road ROW

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Pulsipher-New Harmony Access Road ROW DOI-BLM-UT-C030-2022-0021-EA

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CHAPTER 1. INTRODUCTION

1.1 BACKGROUND AND INTRODUCTION

Dusty Pulsipher, Applicant, has applied for a road right-of-way (ROW) to cross BLM-managed public lands north of New Harmony, Utah in Washington County to gain access to his private parcel for seasonal recreational use and, eventually, the construction of a single dwelling. The requested ROW would contain a twenty-foot-wide graveled road approximately 1.3 miles in length (see **Map 1.1**).

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of authorizing the requested ROW.

1.2 PURPOSE AND NEED

The Bureau of Land Management's (BLM's) purpose is to respond to Dusty Pulsipher's application for the improvement of an existing road segment and the construction of a new road segment to allow access to a private parcel. The need is established by the BLM's statutory and regulatory responsibilities regarding ROWs under the Federal Land Policy and Management Act of 1976 (43 U.S. Code [USC] 1761).

1.2.1 Decision to be made

The BLM Authorized Officer will decide whether to authorize, authorize with modifications, or deny issuance of the Pulsipher ROW application for the improvement of an existing road segment and the construction of a new road segment. The decision will be informed by the analysis in this EA. If authorized, the BLM will decide under what terms and conditions they will grant the ROW.

If granted, the permanent ROW would be issued for 30 years and the short-term ROW would be issued for up to 3 years and would be pursuant to Section 507 of the FLPMA of 1976. The requested ROW and vicinity map is shown in Figure 1.1

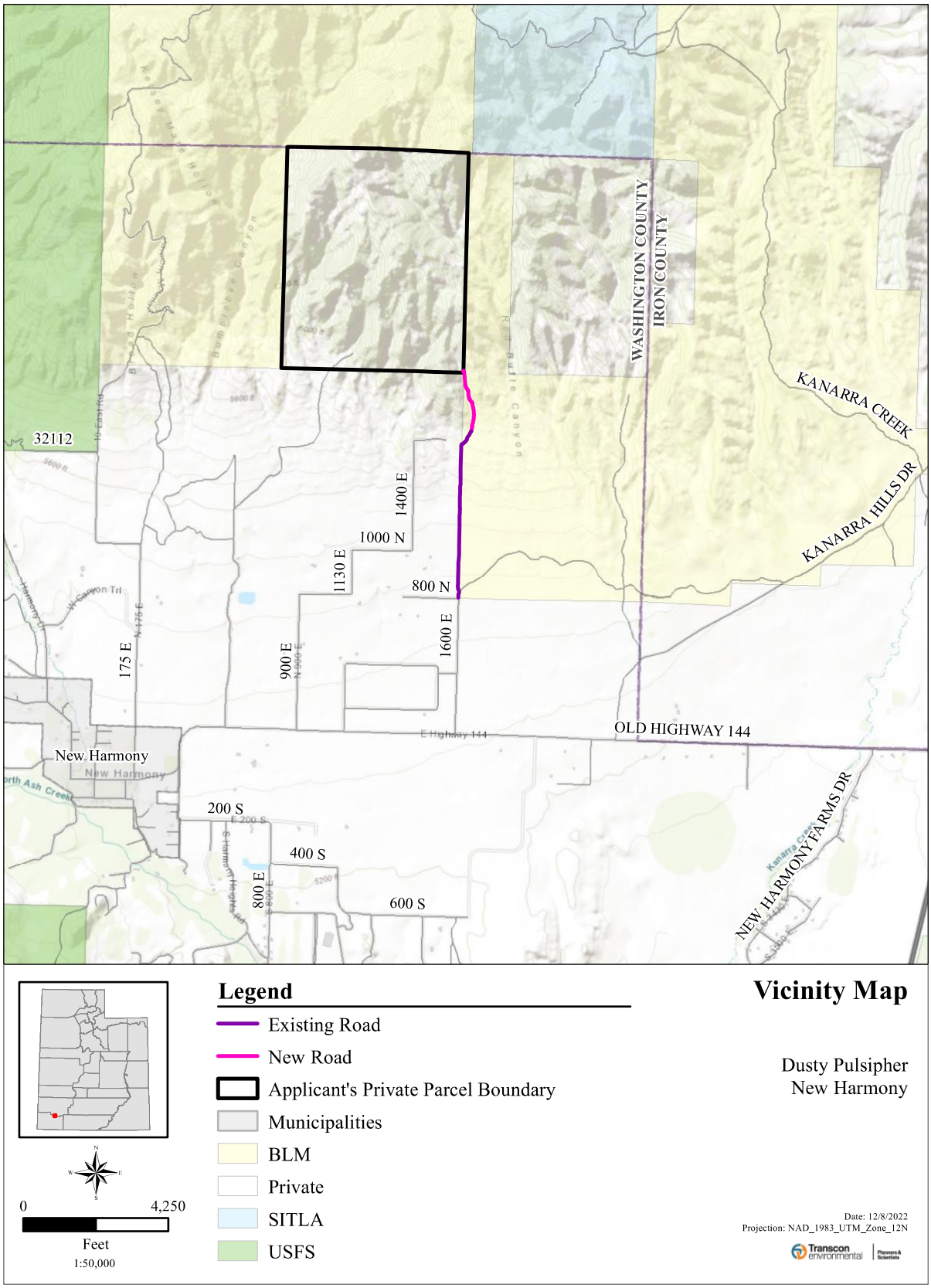

Figure 1.1. Vicinity Map

1.3 LAND USE PLAN CONFORMANCE

The Proposed Action conforms to the St. George Field Office (SGFO) Resource Management Plan (RMP) and Record of Decision (BLM 1999 amended 2001, 2016, 2021).

Table 1.3 Land Use Plan Conformance

Lands and Realty; Rights-of-Way Objective (pg. 2.3)	*How is the Proposed Action in conformance with this objective?*
This Plan will continue to make public lands available for a variety of ROWs where it is consistent with planning goals and prescriptions for other resources. Where possible, BLM will encourage project sponsors to locate new ROWs in existing or designated utility and transportation corridors.	The request for this ROW uses an existing access corridor for 70% of the length and will remain open to the public. ROW construction schedule will avoid conflict with wildlife seasonal use for nesting.
RMP Fish and Wildlife Habitat Management Objective (pg. 2.24)	*How is the Proposed Action in conformance with this objective?*
BLM's overall objective for fish and wildlife habitat management will be to maintain habitats in properly functioning conditions to support natural wildlife diversity, reproductive capability, and appropriate human use and employment.	The Proposed Action is in conformance with this management objective as habitat assessments have been completed by SGFO and Cedar City Field Office biologists, and proposed applicant-committed environmental protection measures and design features discussed in this document will be employed.

1.4 RELATIONSHIP TO STATUTES, REGULATIONS, OTHER PLANS, AND OTHER NEPA DOCUMENTS

The granting of a ROW supports compliance with the statutes, regulations, and handbooks explained in Table 1.4.

Table 1.4 Relationship to Statutes, Regulations, and Handbooks

***Federal Land Policy and Management Act* of 1976 (FLPMA, 43 U.S.C. 1701 et seq.)**	The Project ROW grant would be issued under the authority granted the BLM under FLPMA.
BLM ROWs Regulations (43 CFR 2800)	The Project ROW grant would be issued under the BLM regulations developed under FLPMA.
BLM NEPA Handbook H-1790-1	This EA has been developed according to the guidance provided in, and is in conformance with, the Handbook.
Archaeological Resources Protection Act of 1979 (16 U.S.C. 470 et seq)	The existing roadway is survey exempt due to road use, previous chaining, and existing Class III survey.
NHPA of 1966 (16 U.S.C. 668-668d)	The Project complies with the NHPA of 1966 as no historic resources were observed during a Class III cultural resource survey of the new construction area.
Bald and Golden Eagle Protection Act (16 U.S.C. 668-668d)	Bald eagles are a fairly common winter visitor (Appendix B). No construction is anticipated to occur during winter.
Migratory Bird Treaty Act of 1918 (16 U.S.C. 703–711 Executive Order 13186)	No construction will occur during migratory bird nesting/breeding season. If construction is expected to occur, preconstruction nesting bird surveys must occur.

1.5 ISSUES IDENTIFIED FOR ANALYSIS

The BLM Interdisciplinary Team (IDT) screened the Proposed Action and completed an IDT Checklist (**Appendix B**) to identify resource values and land uses that could be affected by granting the ROW and that would therefore require analysis in the EA. Resources that were identified as not present in the program area or that would not be affected to a degree that requires detailed analysis are not described in or analyzed in this EA.

The following resources and potential issues are discussed in detail in this document:

Table 1.5 Issues Analyzed in Detail

Resource	Issue
Soils	• How would implementation of the Proposed Action impact soils in and around the project area? • What erosion concerns exist and how will these be mitigated? • How will the composition of soils adjacent to the graveled road be impacted by the introduction of the gravel material?
Vegetation excluding USFWS Designated Species	• How would the Proposed Action directly impact native vegetation?
Wildlife & Fish excluding USFWS Designated Species	• How would implementation of the Proposed Action impact habitat for native wildlife species?
Wildlife (Migratory Birds)	• How would the Proposed Action affect migratory bird species' nesting and their habitat?

CHAPTER 2. ALTERNATIVES

2.1 INTRODUCTION

This chapter describes the Proposed Action including program Design Features and the No Action Alternative. One alternative was proposed but eliminated from further analysis.

2.2 NO ACTION

Under the No Action Alternative, the BLM would not grant the ROW, and the Applicant could not feasibly access his property. The Applicant could use the existing 0.95 mile BLM two track road (Photo 1, Photo 2) in its current condition for access up to the fence line; however, any further travel by vehicle would not be authorized. Off Highway Vehicle (OHV) use in this area is rated as Limited which means it is restricted at certain times or use is only authorized on designated routes (BLM 2022). There is no other feasible way to access the applicant's property.

2.3 PROPOSED ACTION

The Proposed Action is for the BLM to approve the road ROW to allow the Applicant to cross public lands north of New Harmony, Utah in Washington County to gain access to the Applicant's private parcel for seasonal recreation and eventually the construction of a single dwelling. The requested ROW would follow the BLM property line on an existing two-track dirt road for 0.95 mile, then curve northeast along an existing natural drainage for 0.35 miles to the private property line. (Photo 4, Photo 6) The existing segment of the road is rutted and would require grading and the construction of a drainage ditch along the road edge. An unlocked "cowboy gate" will be built at the end of the existing road to maintain the integrity of the fence and discourage unauthorized users. The remaining 0.35-mile would be new construction, with cut and fill required.

The total permanent ROW would be 1.3 miles long and twenty (20) feet wide for a total of up to 3.15 acres of permanent disturbance. The maximum allowable temporary disturbance is an additional 10 foot wide ROW for the existing 0.95 miles, and an additional 30 foot wide for the 0.35 miles of new construction. The additional disturbance is 2.42 acres, for a total of 5.57 acres of disturbance.

Surveying and staking of both the upgrading of the BLM road segment and the new construction would be provided by the Applicant. The existing road would be graded and leveled, followed by application and compaction of gravel. Drainage ditches would be established along the edges of the road to keep water off the road. The new section of the road will require clearing and disposal of vegetation, protection of the existing drainage, cut and fill to create the roadbed, grading, and application and compaction of gravel. Construction is anticipated to take less than one week.

If granted, the permanent ROW of 20 feet would be issued for thirty years; the short-term construction ROW of an additional 10 feet would be issued for up to three years.

2.3.1 Design Features

Design Features are measures or procedures incorporated into the Proposed Action that could reduce or avoid adverse impacts. The following Design Features are incorporated into this Proposed Action:

Table 2.3 Design Features

#	Design Features
	Soils
SOL-1	The holder shall use sediment and erosion control measures such as use of silt fencing and fiber rolls during construction activities to control runoff, erosion, and sedimentation. Watering shall also be used as needed to control dust.
SOL-2	At no time shall vehicle or equipment fluids be dumped on public lands. All accidental spills must be reported to the BLM and be cleaned up immediately, using best available practices and requirements of the law. All spills of federally or state listed hazardous materials which exceed the reportable quantities shall be promptly reported to the appropriate state agency and the St. George Field Office.
	Visual Resource Management
VRM-1	The holder shall promptly remove and dispose of all litter and debris, caused by its activities to the satisfaction of the Authorized Officer.
	Invasive Species and Noxious Weeds
WDS-1	Minimize area of disturbance to lessen the establishment of invasive species and noxious weeds.
WDS-2	Reseed all disturbed areas with a native, BLM-approved seed mixture after construction. Interseeding, secondary seeding, or staggered seeding may be required to accomplish revegetation objectives.
WDS-3	Prior to entering the construction area, all equipment shall be power washed to prevent the spread of weeds.
	Livestock
LVS-1	Applicant is responsible for keeping existing cattleguard in functioning condition. ROW holder is responsible for keeping the gates closed and ensuring fence always stays in place.
	Wildlife
WDL-1	Conduct construction activities during non-breeding/nesting season.
	Migratory Birds and Raptors
MIG-1	Construction activities, including habitat alteration and noise, will occur outside of Utah's migratory bird primary nesting season (April 15 through August 15).
MIG-2	A pre-construction survey (fewer than 7 to 10 days prior to when work begins on the project site) by a qualified biologist approved by the BLM SGFO will be conducted for nesting birds if construction must take place during nesting season .
MIG-3	If an active nest is identified, the BLM biologist will be notified, and a no-activity buffer (ranging from 100 feet to 1 mile, depending on species) will be established around the nest site and remain in place until the young have fledged and/or the nest becomes inactive (Romin and Muck 2002; USFWS 2014). After August 31, no further avian surveys will be required until April 15th of the next year.
	Roads and Trails
RDT-1	Maintain access to the BLM-managed public land and existing road during and after construction.
RDT-2	The Applicant shall construct, operate, and maintain the improvements and structures associated with the ROW in strict conformity with the Terms and Conditions of the ROW grant.
RDT-3	Construction or maintenance related traffic shall be restricted to existing access roads or County maintained roads. Cross-country vehicle travel will not be permitted unless the authorized officer gives prior written approval.
RDT-4	Applicant is responsible for ROW maintenance.

2.4 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM FURTHER ANALYSIS

There is private property located to the west of the BLM property line and existing road with multiple properties that could provide the Applicant with access to his property that would reduce the amount of BLM land requested for the ROW. However, the Applicant contacted the private

landowners to request access through their property, and none was willing to grant him access. Therefore, this alternative was eliminated from further analysis.

CHAPTER 3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL EFFECTS

3.1 INTRODUCTION

This chapter describes (1) the affected environment, specifically the existing or baseline conditions relevant to each issue identified in **Section 1.5**, followed by (2) a description of the direct, indirect, and cumulative environmental effects projected to result from each alternative. Effects include ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effects will be beneficial.

The analysis area chosen for all four Issues (soils, vegetation, wildlife and fish, and migratory birds) is a 0.25-mile buffer around the proposed 1.3 mile roadway route. This analysis area is approximately 538 acres and was chosen because it incorporated both BLM and private land with which to measure potential impacts. The analysis area map is shown in Figure 1.2.

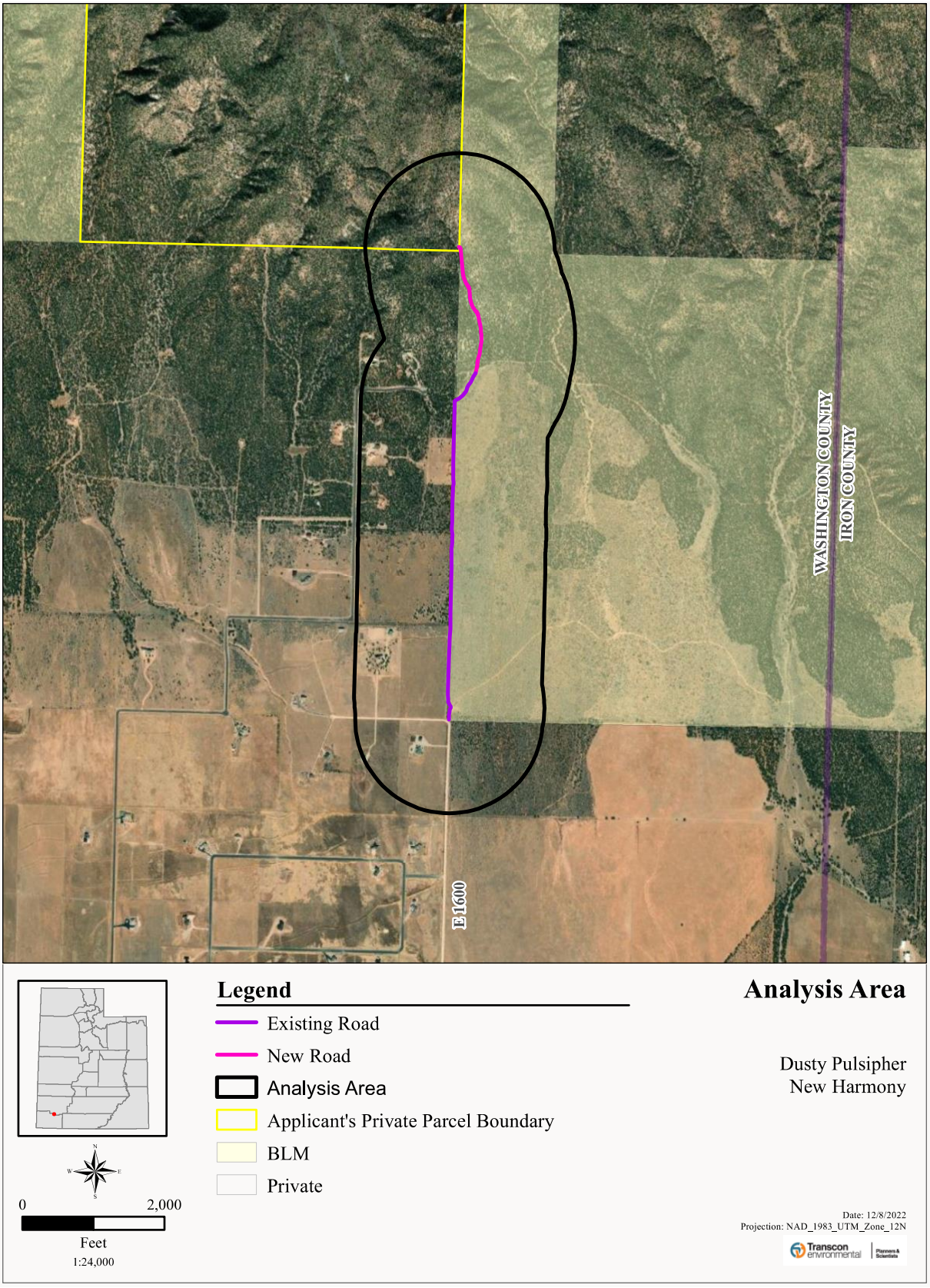

Figure 1.2. Analysis Area Map

The intensity of impact is described in relation to the analysis area and quantified where possible. This may be either a percentage of the analysis area or as total affected units (e.g., acres of vegetation).

The analysis of effects in this chapter is based on the best available data. Knowledge of the area and professional judgment are used to infer environmental impacts where data are incomplete or unavailable. Acreage figures and other numbers used in the analyses are approximate projections for comparison and analytical purposes only. Readers should not infer that they reflect exact measurements or precise calculations.

3.1.1 General Physiographic Setting of the Project Area

The affected area is north of the town of New Harmony, Utah in a high desert valley typical of the Basin and Range which is characterized by steep mountain ranges separated by long flat valleys. (Photo 5)The area is rural, the town has approximately two hundred residents, there are active grazing allotments, and small farms. The valley has a gradual slope up to the north through a pinyon-juniper woodland surrounded by mountains. Over the course of the 1.3-mile proposed project, the elevation gain is approximately two hundred feet. The mountains are maintained as open space on public lands. The BLM land proposed for the ROW is an active grazing allotment.

3.1.2 Cumulative Effects Scenario

Cumulative effects, which are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.1). Past and present actions in the project analysis area include BLM allotment grazing. Past actions also include the development of a handful of residences within the project analysis area.

Reasonably foreseeable future actions are decisions, funding, or formal proposals that are either existing or are highly probable based on known opportunities or trends. The following is the only reasonably foreseeable future action that the BLM is aware of within the analysis area: 1. An approved Categorical Exclusion for a ROW to place fiber optic cable into existing conduit along I-15 near the New Harmony exit (DOI-BLM-UT-C030-2022-0017-CX April 2022). It is approximately 4.5 miles from the proposed project area.

BLM allotment grazing is anticipated to continue as a reasonably foreseeable future action. There have been no requests for adjustment in grazing allotments in the project area. There are no other reasonably foreseeable future actions expected to take place within the analysis area.

3.2 ISSUE: HOW WOULD IMPLEMENTATION OF THE PROPOSED ACTION IMPACT SOILS IN AND AROUND THE PROJECT AREA?

3.2.1 Affected Environment

Soils in an area occur in a pattern related to the geology, landforms, slope, climate, and natural vegetation of the area. Individual soils merge into one another as their characteristics change over time because of natural forces such as earthquakes and erosion. The soils in the analysis area are a combination of igneous rock on the mountains and soils deposited by wind and water erosion. Approximately 380 acres of the 538 acre analysis area has already experienced soil disturbance because of roads, buildings, and cattle grazing.

The Natural Resource Conservation Service Soil Resource Report for the project area shows four soil units (**Appendix D**). From lower to higher elevation, they are Lavate sandy loam, Naplene silt loam, Nehar-Ildefonso complex, and Motoqua-Rock outcrop complex. The existing BLM two track consists of the loams, an alluvial fan weathered from the surrounding igneous formations, and the Nehar complex is alluvial fan on the hillside. The new section of the road is the mountain slope, Motoqua-Rock complex.

3.2.2 Environmental Impacts—No Action

Under the No Action Alternative, the BLM would not approve the proposed ROW. The existing two-track road would not be improved. Occasional public traffic using the two-track road would be expected to cause further rut deepening and soil compaction on the existing roadway.

3.2.3 Environmental Impacts—Proposed Action

The total soil disturbance area would be up to 5.57 acres which is 3.5% of the undisturbed 158 acres. A total area of 3.15 acres would be permanently impacted by the road. This represents a 2.0% reduction in the undisturbed soil. Total soil volume moved is anticipated to be approximately 200 cubic yards. No soil would be moved offsite or brought in from offsite. All cut and fill materials would be balanced onsite. All disturbance outside the final permanent roadway must be reseeded with a native, BLM approved seed mix per the Design Feature WDS-2. Disturbance is anticipated to be highly temporary, as construction is anticipated to be completed within a week after beginning.

3.2.4 Cumulative Effects

The project soil disturbance would add to existing disturbance caused by livestock grazing in the nearby grazing allotment. The presence of a permanent road would incrementally add 3.15 acres of soil disturbance within the analysis area, but this disturbance is not expected to alter the ongoing grazing use and any associated soil disturbance in any way. Based upon past and present grazing and lack of reasonably foreseeable future actions in the area, cumulative effects are not expected.Issue: What erosion concerns exist and how will these be mitigated?

3.2.5 Affected Environment

The Natural Resource Conservation Service Soil Resource Report for the project area shows four soil units (**Appendix D**). From lower to higher elevation, they are Lavate sandy loam, Naplene silt loam, Nehar-Ildefonso complex, and Motoqua-Rock outcrop complex. The existing BLM two track consists of the loams, an alluvial fan weathered from the surrounding igneous formations, and the Nehar complex is alluvial fan on the hillside. The new section of the road is the mountain slope, Motoqua-Rock complex.

Loam soils have high amounts of silt and sand, are generally well drained, but when disturbed by wind or water can begin to erode. The sparse vegetation in the area also contributes to increased erosion potential.

3.2.6 Environmental Impacts—No Action

Under the No Action Alternative, the BLM would not approve the proposed ROW. The existing two-track road would not be improved. Erosion of the existing, unimproved two-track access road would be expected to continue.

3.2.7 Environmental Impacts—Proposed Action

Erosion due to runoff is anticipated to be minimal. Loam soils are prone to erosion by water and wind with the sparse vegetation a contributing factor. To help prevent erosion, the Applicant shall use sediment and erosion control measures such as use of silt fencing and fiber rolls during construction activities (Design Feature SOL-1) to control runoff, erosion, and sedimentation. No cross-drain culverts are expected to be needed to provide drainage since the road is located along the side of a gentle hill following an existing natural drainage. Ditches on either side of the road would carry water away and prevent it from accumulating on the road surface, minimizing erosion

of the road. The drainage ditches where the water runoff will accumulate would run downslope and then filter off into the landscape as it flattens. Applicant has stated (SF-299) that he expects to perform yearly grading, ditch maintenance, and clean up from seasonal storms to reduce erosion of the roadway and ditches (Design Feature RDT-4).

3.2.8 Cumulative Effects

Past activities include the disturbance of cattle grazing, installation of fencing, and creation of two track roads on the BLM managed land based on grazing allotment usage. Grazing disturbance will continue and include a minimal potential for additional erosion. The conversion of the un-graveled two-track road to a graveled roadway should result in a cumulative decrease in erosion potential. The regular road use by the Applicant to access his private property is not anticipated to result in cumulatively considerable erosion potential alongside past and present grazing use.

3.3 ISSUE: HOW WILL THE COMPOSITION OF SOILS ADJACENT TO THE GRAVELED ROAD BE IMPACTED BY THE INTRODUCTION OF THE GRAVEL MATERIAL?

3.3.1 Affected Environment

The soils in the analysis area are a combination of igneous rock on the mountains and soils deposited by wind and water erosion. Approximately 380 acres of the 538 acre analysis area has already experienced soil disturbance because of roads, buildings, and cattle grazing. The Natural Resource Conservation Service Soil Resource Report for the project area shows four soil units (**Appendix D**). From lower to higher elevation, they are Lavate sandy loam, Naplene silt loam, Nehar-Ildefonso complex, and Motoqua-Rock outcrop complex. The existing BLM two track consists of the loams, an alluvial fan weathered from the surrounding igneous formations, and the Nehar complex is alluvial fan on the hillside. The new section of the road is the mountain slope, Motoqua-Rock complex.

3.3.2 Environmental Impacts—No Action

Under the No Action Alternative, the BLM would not approve the proposed ROW. The existing two-track road would not be improved, and the new road section would not be constructed. Therefore, no gravel would be introduced under this alternative.

3.3.3 Environmental Impacts—Proposed Action

Travel on the road is expected to create gravel road dust and disturbance of the gravel surface with an amount of gravel deposited in the drainage ditch and on the soil adjacent to the road. As the sandy loam soils on the roadside become mixed with gravel from the road, it will influence the soil compaction and should increase infiltration, decrease runoff, and minimize soil loss due to water-driven erosion.

3.3.4 Cumulative Effects

Users who have been deterred in the past by the condition of the existing two track road will now have an upgraded surface upon which to travel. Assuming an increase in traffic occurs, a small

amount of gravel may be dispersed alongside the road. This is not expected to be a cumulatively considerable impact alongside past and present grazing impacts.

3.4 ISSUE: HOW WOULD THE PROPOSED ACTION DIRECTLY IMPACT NATIVE VEGETATION?

3.4.1 Affected Environment

Of the 538 acres in the analysis area, approximately 380 acres (70%) has been previously disturbed or developed based upon a review of Google Earth aerial views of July 2019. Portions of the private land was cleared for houses and access roads. The BLM land has been used as a grazing allotment. Photos taken during a BLM field visit in January 2022 (**Appendix E**) and the USGS National Landcover Database (USGS 2022) show the primary vegetation is pinyon-juniper woodland and mixed shrub/scrub including sagebrush (Photo 3).

3.4.2 Environmental Impacts—No Action

There would be no disturbance or loss of vegetation if Applicant's vehicle traffic remains on the existing two-track roadway.

3.4.3 Environmental Impacts—Proposed Action

Under the Proposed Action, up to 2.3 acres of vegetation is anticipated to be removed along the initial 0.95-mile section of existing two-track road. This is due to the additional 20-foot construction ROW outside the existing 10-foot-wide two track road. Approximately 2.12 acres of new disturbance will occur to create the new section (0.35 miles for 50 foot construction ROW) for a total of 4.42 acres. It is anticipated that the 20-feet wide ROW for the entire 1.3 miles, or 3.15 acres, would remain permanently disturbed. As 380 of the 538 acres in the analysis area were previously disturbed, the4.42 acres of additional disturbance represents 3 % of the undisturbed vegetation in the analysis area.

Vegetation outside the permanent roadbed and drainage ditches would be reseeded after construction.

3.4.4 Cumulative Effects

Past cattle grazing, fence and cattleguard installation, two track road creation, along with present cattle grazing and two track road use in the analysis area have impacted areas of natural vegetation, resulting in it being destroyed, crushed, or removed. The improvement of the existing two track and construction of the new section of road will destroy additional vegetation, although some will be reclaimed and reseeded with native vegetation according to BLM requirements. The reduction of 3.15 acres of vegetated area within the analysis area will be added to the area already disturbed by past and current grazing. The presence of the new road is not anticipated to result in additional vegetation disturbance due to grazing.

3.5 ISSUE: HOW WOULD IMPLEMENTATION OF THE PROPOSED ACTION IMPACT HABITAT FOR NATIVE WILDLIFE SPECIES?

3.5.1 Affected Environment

There are no floodplains, wetlands, or riparian zones within the analysis area. Private land in the area was cleared of vegetation to construct driveways, houses, outbuildings, and access roads, the BLM managed land is an active grazing allotment with two-track roads and fencing. The remaining vegetation is sagebrush and pinyon-juniper woodland. The project area provides habitat for a variety of resident mammals, birds, and reptiles. The BLM Sensitive Wildlife Species List for Washington County includes the Arizona toad, burrowing owl, ferruginous hawk, fringed myotis, kit fox, Townsend's big-eared bat, bald eagle, Northern goshawk, big-free-tailed bat, and short-eared owl. These species were listed on the IDT checklist as permanent or seasonal residents.

3.5.2 Environmental Impacts—No Action

Without the grant of a permanent ROW, existing habitat would remain, however increased Applicant vehicle traffic on the existing two track road could subject the wildlife to disturbance. Wildlife could be killed in vehicle collisions and nests could be damaged or destroyed if they are on the existing roadway.

3.5.3 Environmental Impacts—Proposed Action

During project construction, resident and seasonal wildlife are likely to be disturbed, may be killed, and their nests, or dens destroyed, although this would be reduced by conducting construction activities in the non-breeding/ nesting season (Design Feature WDL-1)). Also, during project construction, larger animals such as coyotes, gray fox, and mule deer may be disturbed and/or displaced to adjacent habitats. Once construction is completed, the project will result in a permanent loss of general terrestrial habitat for wildlife in the area. This loss was calculated at 3.15 acres of disturbed wildlife habitat. This represents 2% of the undisturbed habitat within the project area. Disturbance of wildlife is expected to diminish after construction as noise, dust, traffic, and human presence decreases. During road use, there is a risk of vehicle collision with wildlife.

3.5.4 Cumulative Effects

The loss of 3.15 acres of wildlife habitat would add to the 380 acres of already disturbed habitat due to residential development and ongoing cattle grazing in the project analysis area. This is an incremental increase of 0.6% to the total, cumulative habitat loss due to human activities in the project area. No additional future loss is anticipated based upon reasonably foreseeable future actions.

3.6 ISSUE: HOW WOULD THE PROPOSED ACTION AFFECT MIGRATORY BIRD SPECIES' NESTING AND THEIR HABITAT?

3.6.1 Affected Environment

Birds navigate along generally regular routes with the state of Utah included in the North American Bird Migration Pacific Flyway. Migration routes often conform closely to major topographical

features; the Pacific Flyway is bounded by the Pacific Ocean to the west and the Rocky Mountains to the east. The maximum period for the migratory bird nesting season in Utah can extend from January 1 through August 31.

The US Fish and Wildlife Service IPaC tool (USFWS 2022) identified six migratory birds that utilize the area for part or all the year, all of which are Birds of Conservation Concern range wide. They are listed in Table 3.7.

Table 3.7 Migratory Birds

Species	IPAC Range	Audubon Bird Migration Explorer Range	Habitat Description	eBird Status Abundance
Black-chinned sparrow (*Spizella atrogularis*)	No data	In Project area	A bird of arid southwestern hills, it is quite localized. It often nests on steep hillsides covered with dense low scrub.	Very Low in summer
California gull (*Larus californicus*)	No data	Not in Project area	It nests around lakes in the interior of the west, and winters commonly along the Pacific Coast, including offshore waters.	None
Cassin's finch (*Carpodacus cassinii*)	No data	In Project area	A resident of mountains and conifer forests of the West. It is sometimes found at high elevations, in the scrubby forest just below tree line.	Low year round
Lewis's woodpecker (*Melanerpes l*ewis)	No data	In Project area	Breed in open ponderosa pine forests and burned forests with a high density of standing dead trees (snags). They also breed in woodlands near streams, oak woodlands, orchards, and pinyon-juniper woodlands. During the nonbreeding season, they move about in nomadic fashion stopping in areas with plentiful resources.	Very Low year round
Olive-sided flycatcher (*Contopus cooperi*)	North Carolina	In Project area	Breeds mostly in northern coniferous forest and winters in the tropics. There is summer range along the Wasatch Mountains continuing south of Cedar City, UT.	Very Low year round
Virginia's warbler (*Vermivora virginiae*)	No data	In Project area	Spends the summer in brush and chaparral on dry mountainsides in the West. Although it is common over much of the West, its nesting behavior remains poorly known, partly because its nest is extremely difficult to find	High in summer

3.6.2 Environmental Impacts— No Action

Several migratory bird species would continue to use the project area for all or part of the year, whether during breeding/nesting season, non-breeding time, or along their migratory route.

3.6.3 Environmental Impacts— Proposed Action

As discussed in Issues 2 and 3, there will be a loss of vegetation and habitat for potential nesting sites. Depending upon the season, during project construction, the resident and/or seasonal avian occupants are likely to be disturbed by noise, dust, traffic, and increased human activity in the area. They could be killed by vehicle traffic and their nests destroyed or abandoned causing an impact to their breeding success, though implementation of Design Feature WDL-1 will minimize the impact. The disturbance may cause them to be displaced to adjacent habitats. During construction, 4.42 acres is expected to be disturbed. The permanent disturbance of 3.15 acres of destroyed vegetation habitat represents removal of 2% of the available undisturbed vegetation.

3.6.4 Cumulative Effects

Based upon past grazing, minimal expected vehicular traffic, and lack of other reasonably foreseeable actions in the area, cumulative effects to migratory birds are not reasonably anticipated.

CHAPTER 4. CONSULTATION AND COORDINATION

4.1 PERSONS, AGENCIES OR GROUPS CONSULTED

Table 4.1. Persons, Agencies or Groups Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
U.S. Fish & Wildlife Service (US FWS)	Information on Consultation, under Section 7 of the Endangered Species Act (16 USC 1531)	After reviewing IPaC, the IDT determined no species requiring consultation are located within the project area.
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	The BLM determined that the .9 miles of the ROW on the existing road to be survey exempt due to the current conditions being disturbed due to road construction/use, previous chaining, and existing Class III survey. A Class III survey on the remaining area of new construction was conducted in April 2022. No cultural sites or isolated finds were encountered during the survey. As proposed, the project will have no effect on eligible cultural sites.

4.2 PUBLIC PARTICIPATION

The BLM conducted internal scoping on the Proposed Action and completed an ID Team Checklist in March 2022. Issues identified by the ID Team were incorporated into this EA for analysis. The BLM will provide a 30-day public review and comment period for the draft EA, beginning on November xx, 2023, and ending on December xx, 2023. Copies of the draft EA are available on the BLM's ePlanning website during the public review and comment period.

APPENDICES

Appendix A—List of References

Appendix B—BLM ID Team Checklist

Appendix C—Road Plans

Appendix D—NRCS Soils Report

Appendix E—Site Photos

APPENDIX A. LIST OF REFERENCES

Bureau of Land Management St. George Field Office (BLM). 1999. (Amended 2001, 2016, 2021). https://eplanning.blm.gov/eplanning-ui/project/64251/570, accessed August 23, 2022.

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APPENDIX B. BLM ID TEAM CHECKLIST

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Pulsipher- New Harmony Access Road ROW

NEPA Log Number: DOI-BLM-UT-C030-2022-0021-EA
File/Serial Number: UTU-95759
Project Leader: Shawnna Dao, Realty Specialist

Project Location: Northeast of New Harmony in the following described location:

Salt Lake Meridian, Utah
T. 38 S., R. 13 W.,
sec. 1, SW¼SW¼SW¼;
sec. 12, lots 2, 3, 6 and 7;
sec. 13, NW¼NW¼.

Project Description:
The BLM St. George Field Office (SGFO) is considering whether to approve an application for a road Right-of-Way (ROW), on BLM-administered lands within the northern portion of the City of New Harmony in Washington County, UT (see map below).

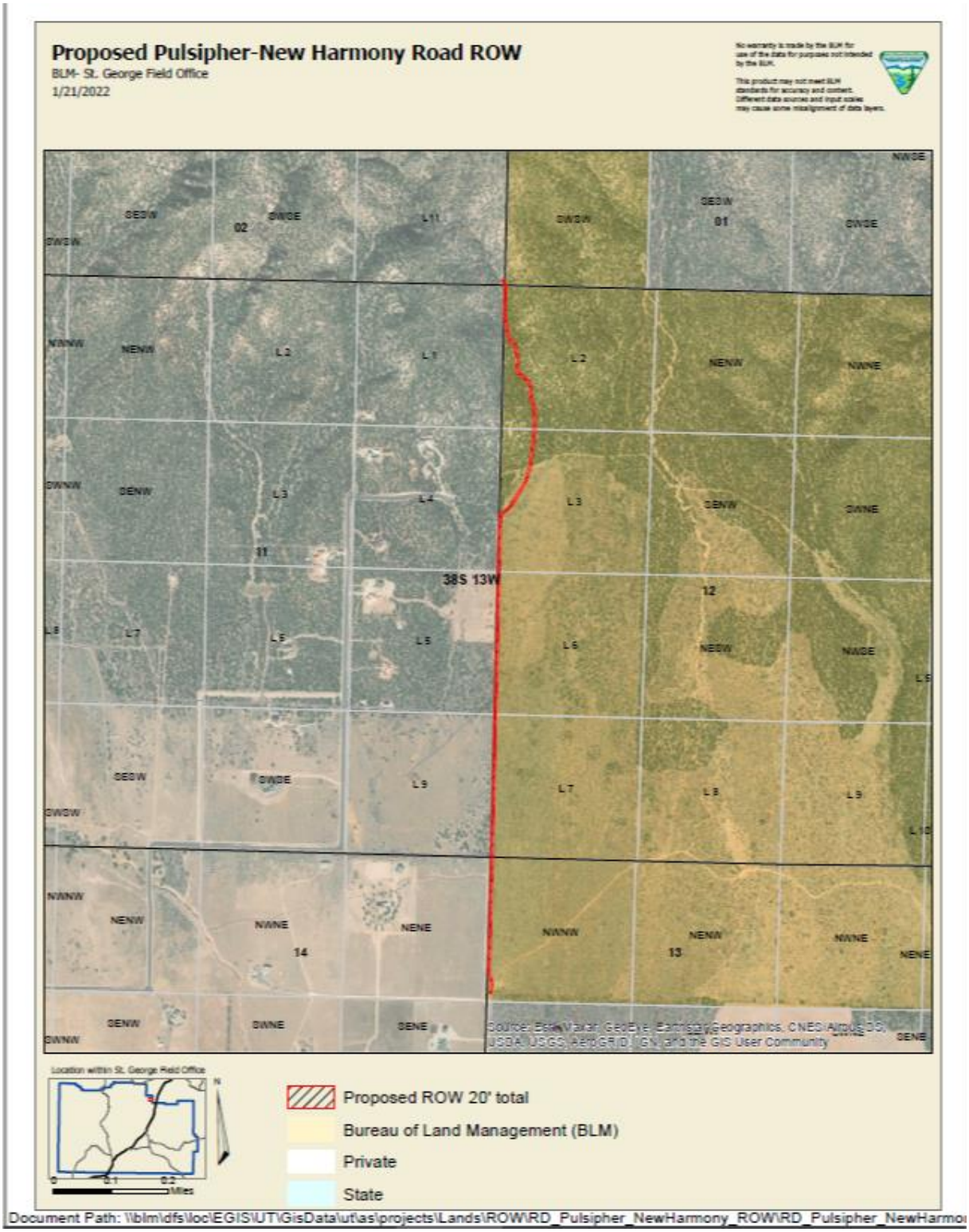
Dusty Pulsipher has applied for a road right-of-way (ROW) to cross public lands to gain access to his private parcel for construction of a single dwelling. The ROW requested would consist of one graveled road located as shown on the map below.

The ROW requested would begin at the cattleguard (at the end of existing public easement UTU-54554). The ROW would follow the property line on an existing two-track dirt road for just under one mile before curving northeast along the existing road to an existing fenceline. The beginning portion of the road is rutted and would be leveled with a gravel base and the drainage ditch established along the edge. The last portion (approximately 0.3 mile) would be new construction beginning at the fenceline as there is no existing road along this part of the proposed alignment. An unlocked "cowboy gate" would be incorporated at this location to maintain the integrity of the fence and discourage unauthorized users. Some cut and fill would be required on this portion, and the applicant proposes to site the road alongside but outside of the drainage to prevent impacts to the natural drainage channel.

The total permanent ROW proposed is approximately 1.3 miles long and 10 feet wide, for a total of 1.576 acres. An additional 10 ft. in temporary construction width short term ROW, predominantly on the east side of the permanent ROW, is proposed for a total of 1.576 acres. The proponent has requested a 50' wide analysis swath to allow for road placement engineering flexibility especially in the northern 0.3 miles of the ROW. Road engineering would be done during NEPA analysis to determine cut-and-fill needs.

A site visit with the applicant and BLM staff was conducted on January 21, 2022. If granted, the permanent ROW would be issued for 30 years, the short-term ROW would be issued for up to 3

years, and would be pursuant to Section 507 of the FLPMA of 1976 (90 Stat. 2781, 43 U.S.C. 1767). More detailed information about the proposal can be found in the following location: S:\SGFO\NEPA\Current Projects\Lands\Pulsipher_New Harmony Road ROW EA



Determination of Staff:

NP = not present in the area impacted by the proposed or alternative actions
NI = present, but not affected to a degree that detailed analysis is required
PI = present with potential for relevant impact that need to be analyzed in detail in the EA
NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Resources and Issues Considered (Includes Supplemental Authorities Appendix 1 H-1790-1)

Determi-nation	Resource	Rationale for Determination	Signature	Date
NI	Air Quality	Dust emission levels would likely increase during construction, however this impact would be minimal and isolated to the project area and limited to the construction period.	J. Frost-Perkins	1/27/2022
NI	Greenhouse Gas Emissions	Greenhouse Gas Emissions are not expected to increase as a result of the Proposed Action.	J. Frost-Perkins	1/27/2022
NI	Wastes (hazardous or solid)	It is not anticipated that hazardous or solid wastes would be an issue however in the event a spill occurs they should be cleaned up in accordance State of Utah hazardous and solid waste clean-up standards.	J. Frost-Perkins	1/27/2022
NI	Water Resources/Quality (drinking/surface/ground)	The nearest surface water resource is the Ash Creek located approximately 0.86 miles from the proposed project site. Soils on and around the project site are sandy well drained soils. Care must be taken to avoid spills of anything that could possibly be washed or leached down into ground water or Ash Creek. If risks are properly mitigated, including spill kits on hand in case of accidents, the proposed action is not anticipated to impact water quality.	J. Frost-Perkins	1/27/2022
NP	Areas of Critical Environmental Concern	The proposed action is not within an ACEC.	S. Taylor	2/8/22
NI	Cultural Resources	The identified Area of Potential Effect (APE) for this undertaking is the project area, ROW, 1.2 mile long, 20' wide. A portion of the APE has a previous Class III survey, U85BL0208, "New Harmony Chaining" encompassing the existing road (.9 miles or 5000') of the ROW. The BLM has determined that the .9 miles of the ROW on the existing road to be survey exempt due to the current conditions being disturbed due to road construction/use, previous chaining, and existing Class III survey. Utah SHPO was informally consulted regarding the use of inventory over 10 years old. Utah SHPO agrees that the previous inventory can be applied as it provides the	A. Van Alfen	1/31/2022

Determi-nation	Resource	Rationale for Determination	Signature	Date
		necessary data to make informed decisions. **The BLM will require Class III survey for the last .3 miles of new construction. Applicant must flag centerline of ROW for new construction previous to Class III survey for contractor.**		
NP	Native American Religious Concerns	Prior and ongoing consultations with American Indian Tribes that claim cultural affiliations to southwestern Utah have not identified religious concerns within or near the proposed project area.	A. Van Alfen	1/31/2022
NP	Paleontology	There are no paleontological resources within or adjacent to the project area. The project area occurs in the Potential Fossil Yield Class (PFYC) 1 which states: ***Class 1*** – **Very Low**. Geologic units that are not likely to contain recognizable paleontological resources. Units assigned to Class 1 typically have one or more of the following characteristics: □ Geologic units are igneous or metamorphic, excluding air-fall and reworked volcanic ash units. □ Geologic Units are Precambrian in age. (1) Management concerns for paleontological resources in Class 1 units are usually negligible or not applicable. (2) Paleontological mitigation is unlikely to be necessary except in very rare or isolated circumstances that result in the unanticipated presence of paleontological resources, such as unmapped geology contained within a mapped geologic unit. For example, young fissure-fill deposits often contain fossils but are too limited in extent to be represented on a geological map; a lava flow that preserves evidence of past life, or caves that contain important paleontological resources. Such exceptions are the reason that no geologic unit is assigned a Class 0. Overall, the probability of impacting significant paleontological resources is very low and further assessment of paleontological resources is usually unnecessary. An assignment of Class 1 normally does not trigger further analysis unless paleontological resources are known or found to exist. However, standard stipulations should be put in place prior to authorizing any land use	K. Voyles	3/10/22

Determi-nation	Resource	Rationale for Determination	Signature	Date
		action in order to accommodate an unanticipated discovery.		
NP	Geology / Mineral Resources/Energy Production	There are no mineral resource or energy production resources within or adjacent to the project area.	K. Voyles	3/10/22
NP	Cave and Karst	There are no caves or karst terrain within or adjacent to the project area. The project area occurs within Quaternary alluviums and colluviums and Miocene age volcanic rocks. There are no karstic rock layers within the project vicinity.	K. Voyles	3/10/22
NI	Environmental Justice	According to the EPA Environmental Justice Screening and Mapping Tool in combination with the Headwaters Socio-Economic Profile System, Washington County, Utah has been categorized as a minority population area of 10-20% and a poverty population area of 10-20%. Less than 5% of the population speaks English "Not Well". This data also shows that low income and high minority populations are generally located in the St. George/Santa Clara/Washington areas in locations not adjacent to BLM managed lands. (see https://ejscreen.epa.gov/mapper/) It is likely that a low income, minority population is also present in the housing area on the east side of the Shivwits Paiute Reservation, and a low income population exists in the Hildale/Colorado City area. These populations are not distinct on census data due to having been lumped in with higher income low-minority areas in Ivins, Apple Valley, and Springdale. No minority or economically disadvantaged communities or populations are present which could be affected by the proposed action or alternatives.	C. Goff	1/25/22
NI	Socio-Economics	Access to a single residence is the driver behind the proposed ROW. The socio-economic impact of the proposed ROW if approved would be so small when compared to other projects in Washington County, that it would have no measurable effect.	C. Goff	1/25/22
NP	Farmlands (Prime or Unique)	There are no prime or unique farmlands within the Project Area.	J. Frost-Perkins	1/27/2022
PI	Soils	Total soil disturbance would be 3.152 acres. 1.576 acres being permanent, and 1.576 temporary during construction. Issue: How will this disturbance impact soils in and around the project area? What erosion concerns exist and how will these be mitigated?	J. Frost-Perkins	3/10/22

Determi-nation	Resource	Rationale for Determination	Signature	Date
		How will the composition of soils adjacent to the pavement be impacted by the introduction of the paving material?		
NP	Floodplains	There are no floodplains within the Project Area.	R. Reese	2/16/22
NP	Wetlands/Riparian Zones	There are no wetlands/riparian zones present within the project area.	R. Reese	2/16/22
PI	Fish and Wildlife Excluding USFW Designated Species	Issue: How would construction of the Proposed Action impact habitat for native wildlife species? The project area provides habitat for a variety of resident mammals, birds, and reptiles. The more common of these species may include: Arizona toad (permanent resident, fairly common), bald eagle (winter visitor, fairly common), burrowing owl (permanent resident, uncommon), ferruginous hawk (permanent resident, fairly common), Northern goshawk (winter visitor, rare), short-eared owl (transient, rare), big- free-tailed bat (summer resident, rare), fringed myotis (permanent resident, uncommon), kit fox (permanent resident, uncommon), spotted bat (permanent resident, rare), Townsend's big-eared bat (permanent resident, fairly common). General wildlife found in the project area include: badgers, deer mice, and desert wood rats. Infrequently, larger animals such as raptors, coyotes, gray fox, and mule deer may pass through the area. During project construction, small mammals, reptiles, and birds maybe disturbed and/or killed, and their nests, or dens destroyed causing short-term impacts; Also, during project construction, larger animals may be disturbed and/or displaced to adjacent habitats causing short-term impacts but may return to the general area once disturbances cease. Once construction is completed, the project will result in permanent loss of general terrestrial habitat for BLM Sensitive species and general wildlife in the area.	S. Taylor	2/8/22
PI	Migratory Birds	Issue: How would construction affect migratory bird species' nesting and their habitat? A number of migratory birds species may use the project area yearlong, or for a portion of the year. Within Washington County, the migratory bird nesting season can be divided into 2 major timeframes: (1) Early Nesting Season: January 1–March 31, e.g., raptors (eagles, owls, falcons, and hawks); and (2) Primary Nesting Season: April 01–July 15, e.g., songbirds, flycatchers, cuckoos, raptors, and the majority of species.	S. Taylor	2/8/22

Determi-nation	Resource	Rationale for Determination	Signature	Date
		However, the maximum time period for the migratory bird nesting season can extend from January 1–August 31. During project construction, small birds may be disturbed and/or killed, and their nests destroyed causing short-term impacts. Larger birds (such as raptors) may be disturbed and/or displaced to adjacent habitats causing short-term impacts; but birds may return to the general area once disturbances cease. If project construction or maintenance occurs during the maximum migratory bird nesting season, a pre-construction survey for nesting birds should be completed by a qualified biologist (< 7–10 days prior to when work actually begins on the project site—using current USFWS protocols). If an active nest is identified, a no-activity buffer (ranging from 100-feet to 1-mile, depending on species) will be established around the nest site and remain in place until the young have fledged and/or the nest becomes non-active.		
NP	Threatened, Endangered or Candidate Plant Species	USFWS IPaC data lists Jones Cycladenia potentially occurring in the proposed project area (data retrieved 2/25/22). Jones Cyclandenia is not known to occur in Washington County. In Utah, this plant is found near Castle Dale, Capital Reef, and in Kane County. Therefore, there would be no effect to this species.	S. Taylor	3/3/22
NI	Threatened, Endangered or Candidate Animal Species	IPaC data retrieved 2/25/2022 showed the following species may be affected by the proposed action (with rationale for including or not including these species for NEPA analysis and Section 7 consultation): Utah prairie dog (UPD): The proposed action is located within the West Desert Region Recovery Unit, however, the entire project is outside of suitable habitat. UDWR heritage data shows no known occurrences within ½ mile, and known occurrence(s) within two miles reported in 1990 (UDWR data accessed 2/28/2022). A UPD low intensity survey/ habitat assessment was performed by CCFO biologist on 3/2/22. There was no suitable habitat or any sign of UPD presence found within the ROW area + 1,000 ft buffer. The proposed action will utilize previously disturbed two-track road, and new disturbance will take place within dense pinyon-juniper habitat that is not suitable for UPD colonies. The nearest mapped habitat is located 2.7 miles east of the proposed ROW. The next	S. Taylor	3/3/22

Determi-nation	Resource	Rationale for Determination	Signature	Date
		closest colonies are about 3.0 miles east, however these colonies are currently unoccupied. Due to the distance from proposed action area and no suitable habitat found within the action area, the action would have no effect for Utah prairie dog. California condor (Condor): No critical habitat occurs within the proposed action area. The nearest breeding site occurs in Zion National Park, approximately 20 miles away to the east. There are no recorded observations for condor within a 2-mile radius (UDWR 2022). There may be a small chance that an individual may fly over the project area, however, due to the small footprint, the proposed project would have no effect on this species. Mexican spotted owl (MSO): The proposed project location is not within or near suitable habitat for the MSO, and there are no reported observations. The nearest known observation is in the Kolob portion of Zion National Park more than 5 miles to the east. The nearest modeled suitable habitat is located over 1.5 miles to the north (Willey and Spotskey 2000). The project would have no effect on the Mexican spotted owl. Southwestern willow flycatcher (SWFL): The proposed project location is not within or near riparian habitat, and is not within or near modeled suitable habitat (Hatten and Paradzick 2003). Mojave desert tortoise: MDT are not known to occur in the New Harmony area, and there have been no observations reported. Habitat is not suitable for the tortoise, as elevation (~5300') is well outside the typical range for MDT (up to approximately 3500' in elevation). Therefore, the proposed project would have no effect on the Mojave desert tortoise. Monarch butterfly (ESA Candidate**):** Design features should include adding native milkweed into seed mixes used for restoration activities and adherence to BLM guidelines for herbicide application. The proposed action would have no effect on this species considering the small footprint of the proposed action, and incorporation of the above design features.		

Determi-nation	Resource	Rationale for Determination	Signature	Date
PI	Vegetation Excluding USFW Designated Species	Issue: How would the project directly impact native vegetation? Clearing native trees and brush to create an access road will directly impact native vegetation by direct removal and/or destruction within the proposed project site. Additionally, temporary disturbance outside the ROW should be reseeded with a native, BLM-approved seed mix after construction is completed.	S. Taylor	3/2/22
NI	Woodland / Forestry	The proposed action is not expected to impact the Woodland or forestry resources.	R. Reese	2/16/22
NI	Fuels/Fire Management	Fire is always a risk here in Washington County. Frequently, hot and dry conditions exist and with them the risk of fire. If construction occurs when the vegetation is dry, especially during the hot dry summer months it is recommended that a water resource be present during construction. All disturbed area must be reseeded with native or desirable introduced species to reduce the further invasion of invasive bromes and/or other invasive vegetation that present a greater fire hazard. If risks are properly mitigated, fire and fuels management is not expected to be impacted by the proposed action.	R. Reese	2/16/22
NI	Invasive Species/Noxious Weeds (EO 13112)	All ground disturbing activities should be done using weed prevention measures. Prior to entering public lands, equipment should be washed clean of any dust, dirt and debris that could contain weed seed. Temporarily disturbed areas must be reseeded to reduce the chance for noxious weed invasion. Any future noxious weeds encountered within the ROW would be the responsibility of the holder to identify and treat appropriately. If these measures are followed appropriately, the proposed action is not anticipated to contribute to the further spread of noxious and invasive weeds.	R. Reese	2/16/22
NI	Lands/Access	The proposed action could improve public access to BLM-managed lands adjacent to the proposed ROW. The existing public easement (U-54554) provides public access to BLM public lands in section 13 on the existing road.	S. Dao	1/21/2022
NI	Livestock Grazing	This ROW falls within the NEW HARMONY GRAZING ALLOTMENT. This is an active allotment. Care needs to be taken to ensure the fence always stays in place, and that the cattleguard does not sustain any damage and is kept clean. The ROW applicant will be responsible to keep the cattleguard in	R. Reese	2/16/22

Determi-nation	Resource	Rationale for Determination	Signature	Date
		functioning condition. The ROW holder will also be responsible for keeping the gates closed along this ROW. The season of use on this allotment is 5/20 – 10/31.		
NI	Rangeland Health Standards	Rangeland health can be impacted by a variety of factors. It is difficult to predict the exact impact the proposed action may have on rangeland health. If proper attention is given to the other resources identified within this checklist, the proposed action is not anticipated to impact Rangeland Health.	R. Reese	2/16/22
NI	Recreation	There would be no impacts to recreation opportunities or resources from the proposed action.	B. Wells	3/10/2022
NI	Visual Resources	The proposed project site falls within Visual Resource Management (VRM) class III. The management objectives for VRM class III are: 1) The level of change to the landscape can be moderate. 2) Management activities may attract attention, but should not dominate the view of the casual abserver. 3) Any changes should repeat the basic elements found in the natural landscape — form, line, color, and texture. Based on the project description, the footprint of the proposed action would be compliant with VRM Class III objectives. The project description includes improving an existing roadway and constructing a new road for approx.. .3 mile. The level of change to the landscape would be moderate and would not dominate the view of the casual observer.	B. Wells	3/14/2022
NLCS				
NP	National Conservation Areas	The proposed action area is not within an NCA.	J. Kellam	3/11/22
NP	National Historic Trails (Old Spanish Trail)	There are no National Historic Trails within the vicinity of the project area. Neither the Northern Route nor the potential Armijo Route of the Old Spanish National Historic Trail are located within or near the proposed project area.	A. Van Alfen	1/31/2022
NP	National Recreational Trails (Gooseberry Mesa)	The Gooseberry National Recreation Trail is not affected by the proposed action.	K. Voyles	3/10/22
NP	Wild and Scenic Rivers	There are no eligible or designated wild and scenic river segments affected by the proposed action.	K. Voyles	3/10/22

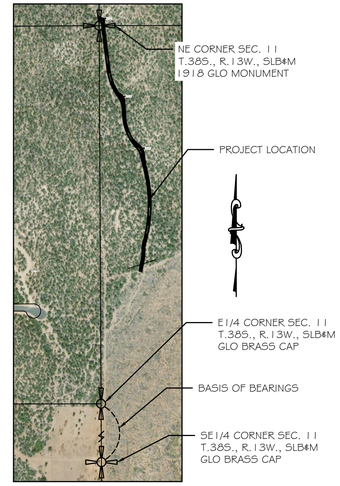
Determi-nation	Resource	Rationale for Determination	Signature	Date
NP	Wilderness/WSA	There are no wilderness areas affected by the proposed action.	K. Voyles	3/10/22
NP	Lands with Wilderness Characteristics	There are no lands with wilderness characteristics, either inventoried or proposed, affected by the proposed action.	K. Voyles	3/10/22

Final Review:

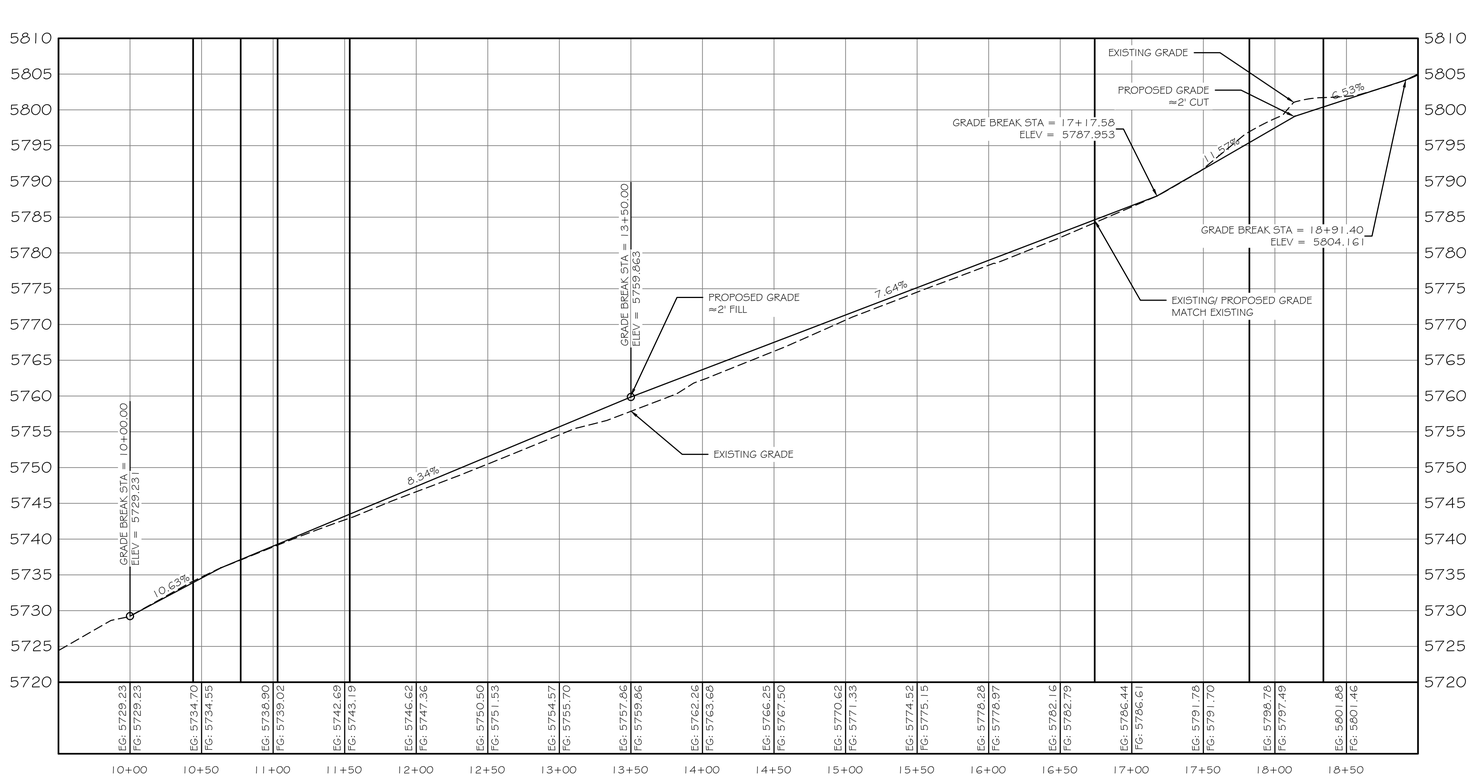
Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

APPENDIX C. ROAD PLANS

0 50 100 Feet



VICINITY MAP
N.T.S.



BASIS OF BEARINGS:

THE BASIS OF BEARINGS OF THIS PROJECT IS N.0°22'50"W. ALONG THE SECTION LINE 2636.67 FEET FROM THE SOUTHWEST CORNER TO THE EAST QUARTER CORNER OF SECTION 11, TOWNSHIP 38 SOUTH, RAGE 13 WEST, SLB&M PER SURVEYS IN SECTION 11 & 14, TOWNSHIP 38 SOUTH, RANGE 13 WEST, SLB&M.

BENCHMARK:

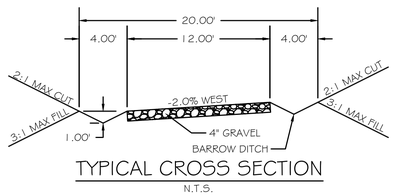
NE CORNER SEC. 11, T.38S., R.13W., SLB&M
FOUND 1918 GLO MONUMENT
ELEVATION: 5886.34

GRADING PLAN NOTES:

1. ALL EXCAVATIONS AND GRADING SHALL BE IN ACCORDANCE OF WASHINGTON COUNTY.
2. THE CONTRACTOR SHALL PROVIDE SUITABLE EQUIPMENT TO CONTROL DUST AND AIR POLLUTION CAUSED BY CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL ALSO PROVIDE SUITABLE MUD AND DIRT CONTAINMENT TO MAINTAIN THE WORK SITE, ACCESS ROADWAYS AND ADJACENT PROPERTIES IN A CLEAN CONDITION.
3. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF THE DRAINAGE AREAS UPON COMPLETION OF CONSTRUCTION.
4. NO GRADING BEYOND THE LIMIT OF DISTURBANCE.
5. CONTRACTOR SHALL VERIFY ELEVATION IN THE FIELD.

EARTHWORK NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ALL EARTH WORK VOLUMES.



TYPICAL CROSS SECTION
N.T.S.

PLATT & PLATT, INC
CONSULTING CIVIL ENGINEERS & LAND SURVEYORS
195 N. 100 E.
CEDAR CITY, UT 84720
TEL: (435) 586-6151
FAX: (435) 586-8567
EMAIL: PLATT@INFOWEST.COM

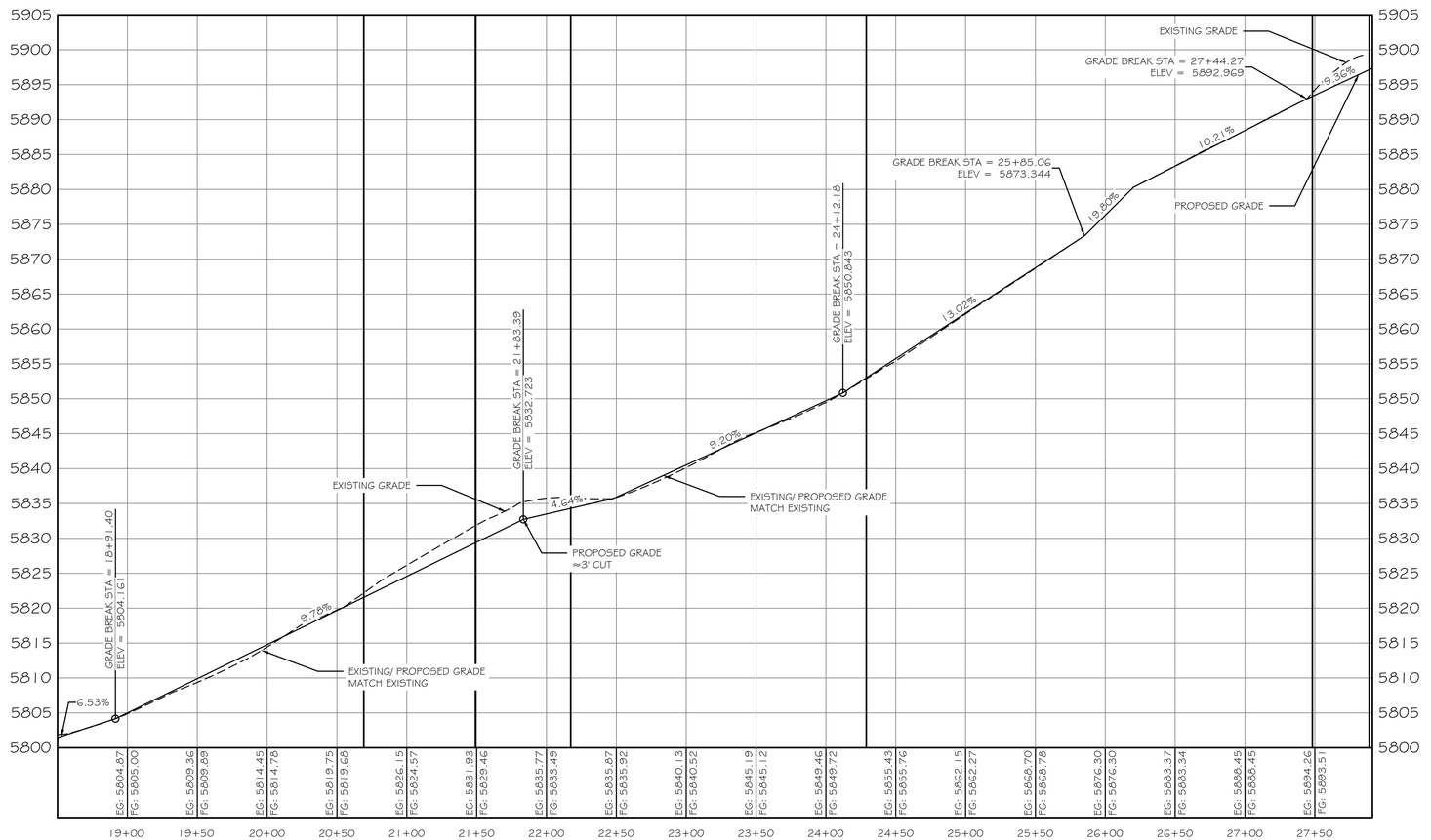
REVISION: DESCRIPTION
DATE:
DATE:
DATE:
DATE:

PLAN & PROFILE SHEET FOR
DUSTY PULSIPHER
WITHIN THE W1/2 OF SECTIONS 1, 12, & 13, T. 38 S., R. 13 W., SLB&M
WASHINGTON COUNTY, UTAH

PROFESSIONAL LAND SURVEYOR
ROBERT B. PLATT
164659
STATE OF UTAH

DRAWN BY: H.K. HULET
CHECKED BY: R.B. PLATT
DATE: Aug 08, 2022
HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 10'

FILE: N:\Dwg\2021 Projects\Dusty Pulsipher\22 38-13\State Plane NAD83.dwg



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BENCHMARK:

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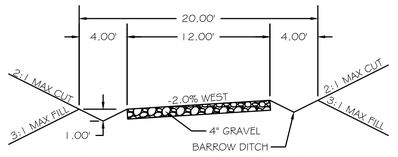

TYPICAL CROSS SECTION
N.T.S.

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FAX: (435) 586-8567
EMAIL:
PLATT@INFOWEST.COM

REVISION:
DESCRIPTION
DATE:
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PLAN & PROFILE SHEET FOR
DUSTY PULSIPHER
WITHIN THE W1/2 OF SECTIONS 1, 12, & 13, T.38 S., R. 13 W., SLB&M
WASHINGTON COUNTY, UTAH

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DRAWN BY:
M.K. MULET
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HORIZ. SCALE: 1" = 50'
VERT. SCALE: 1" = 10'

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APPENDIX D. NRCS SOILS REPORT

United States Department of Agriculture

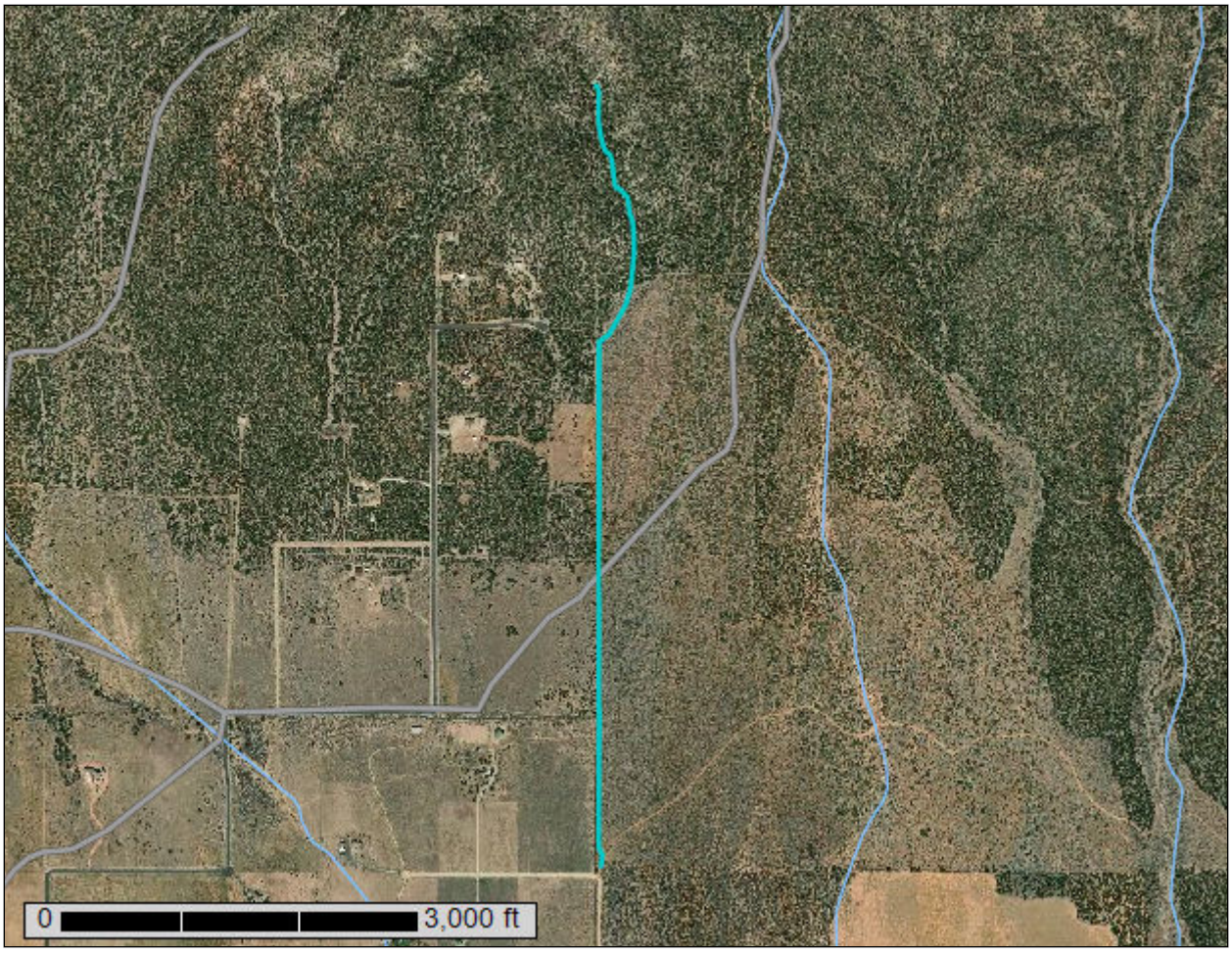
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Washington County Area, Utah

Road Shape File_BLMeditbuffer



September 23, 2022

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

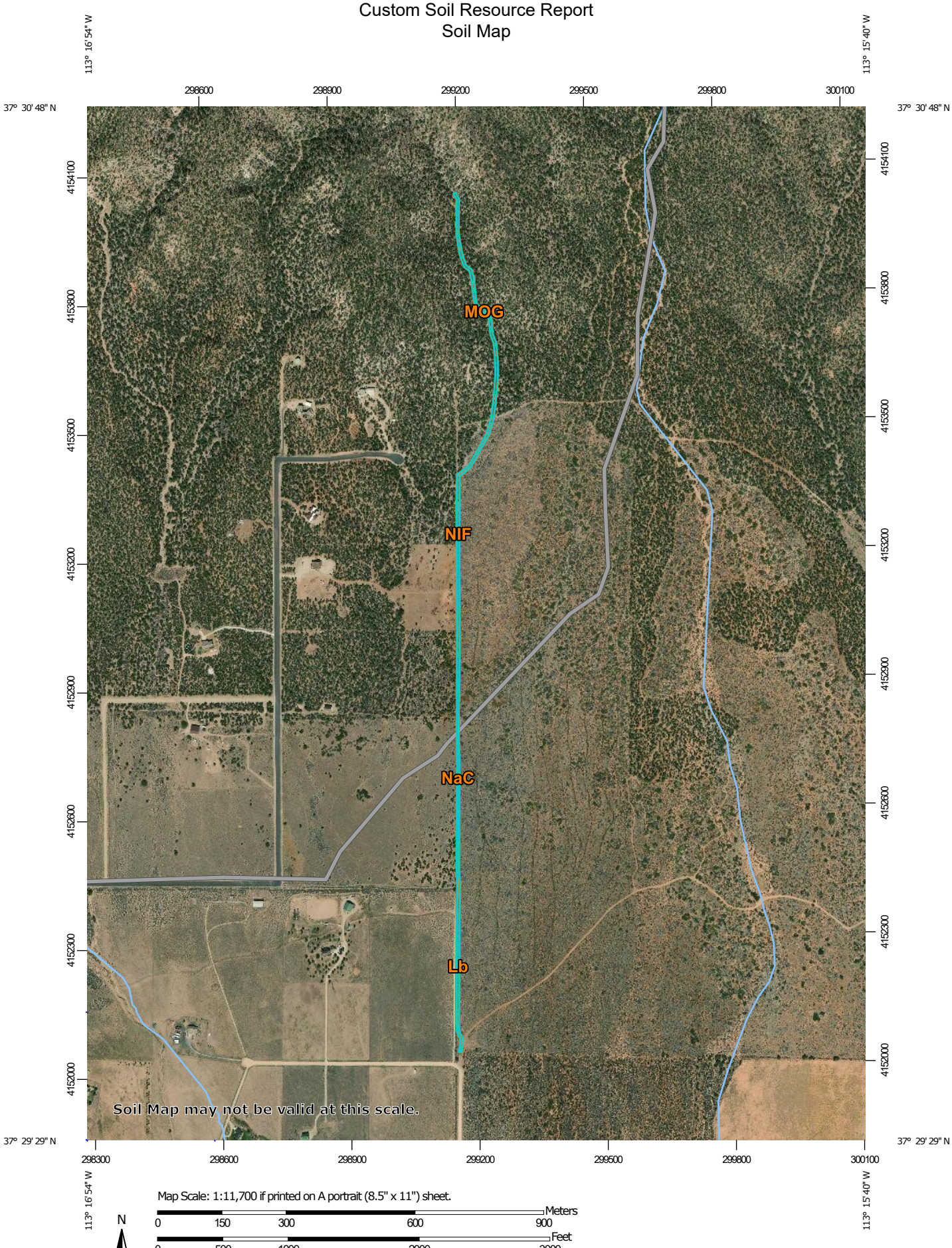
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:11,700 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 150 300 600 900

Feet
0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County Area, Utah
Survey Area Data: Version 15, Sep 7, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 7, 2015—Oct 22, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Lb	Lavate sandy loam	0.6	20.3%
MOG	Motoqua-Rock outcrop complex, 30 to 70 precent slopes	0.8	27.9%
NaC	Naplene silt loam, 2 to 6 percent slopes	0.7	21.9%
NIF	Nehar-Ildefonso complex, 3 to 30 percent slopes	0.9	29.9%
Totals for Area of Interest		**3.0**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Washington County Area, Utah

Lb—Lavate sandy loam

Map Unit Setting

National map unit symbol: j8fd
Elevation: 4,800 to 5,600 feet
Mean annual precipitation: 14 to 15 inches
Mean annual air temperature: 45 to 52 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Lavate and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lavate

Setting

Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium weathered from acid igneous rocks

Typical profile

H1 - 0 to 4 inches: sandy loam
H2 - 4 to 9 inches: sandy clay loam
H3 - 9 to 19 inches: sandy clay loam
H4 - 19 to 33 inches: clay loam
H5 - 33 to 50 inches: sandy clay loam
H6 - 50 to 60 inches: gravelly sandy clay loam

Properties and qualities

Slope: 2 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 2e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R035XY306UT - Upland Loam (Basin Big Sagebrush)
Hydric soil rating: No

Minor Components

Clovis

Percent of map unit: 5 percent

Naplene
Percent of map unit: 5 percent

Cobbly clay loam soils
Percent of map unit: 5 percent

MOG—Motoqua-Rock outcrop complex, 30 to 70 precent slopes

Map Unit Setting

National map unit symbol: j8fs
Elevation: 4,700 to 6,700 feet
Mean annual precipitation: 13 to 14 inches
Mean annual air temperature: 46 to 52 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Motoqua and similar soils: 65 percent
Rock outcrop: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Motoqua

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Material weathered from acid igneous rocks

Typical profile

H1 - 0 to 2 inches: very cobbly sandy loam
H2 - 2 to 8 inches: very gravelly loam
H3 - 8 to 16 inches: very gravelly sandy clay loam
H4 - 16 to 20 inches: unweathered bedrock

Properties and qualities

Slope: 30 to 70 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Ecological site: R029XY320UT - Upland Shallow Loam (Singleleaf Pinyon-Utah Juniper)
Hydric soil rating: No

Description of Rock Outcrop

Setting
Landform: Ridges
Down-slope shape: Convex
Across-slope shape: Convex

Minor Components

Quazo
Percent of map unit: 5 percent

Nehar
Percent of map unit: 5 percent

Dag flat
Percent of map unit: 5 percent

NaC—Naplene silt loam, 2 to 6 percent slopes

Map Unit Setting
National map unit symbol: j8fz
Elevation: 3,600 to 5,300 feet
Mean annual precipitation: 14 to 15 inches
Mean annual air temperature: 44 to 52 degrees F
Frost-free period: 140 to 160 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition
Naplene and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Naplene

Setting
Landform: Valleys, alluvial fans
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Alluvium derived from igneous and sedimentary rock

Typical profile
H1 - 0 to 2 inches: silt loam
H2 - 2 to 7 inches: silt loam

H3 - 7 to 15 inches: silt loam
H4 - 15 to 22 inches: silty clay loam
H5 - 22 to 39 inches: silt loam
H6 - 39 to 60 inches: silt loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 10.8 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: R035XY306UT - Upland Loam (Basin Big Sagebrush)
Hydric soil rating: No

Minor Components

Schmutz

Percent of map unit: 5 percent

Redbank

Percent of map unit: 5 percent

Mespun

Percent of map unit: 5 percent

Chilton

Percent of map unit: 5 percent

Clovis

Percent of map unit: 5 percent

NIF—Nehar-Ildefonso complex, 3 to 30 percent slopes

Map Unit Setting

National map unit symbol: j8fv
Elevation: 4,200 to 6,100 feet
Mean annual precipitation: 13 to 15 inches
Mean annual air temperature: 46 to 58 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

Nehar and similar soils: 45 percent
Ildefonso and similar soils: 35 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Nehar

Setting

Landform: Hills, alluvial fans
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, concave
Across-slope shape: Convex
Parent material: Material weathered from coarse-grained acid igneous rock

Typical profile

H1 - 0 to 5 inches: very stony sandy loam
H2 - 5 to 16 inches: very stony clay
H3 - 16 to 29 inches: very stony sandy clay
H4 - 29 to 47 inches: very stony sandy clay loam
H5 - 47 to 60 inches: very stony sandy loam

Properties and qualities

Slope: 3 to 30 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: R029XY330UT - Upland Stony Loam (Shrub Liveoak)
Hydric soil rating: No

Description of Ildefonso

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Materials weathered from limestone, conglomerate, sandstone, and some acid igneous rocks

Typical profile

H1 - 0 to 5 inches: very gravelly sandy loam
H2 - 5 to 10 inches: very gravelly loam

H3 - 10 to 21 inches: very gravelly sandy loam
H4 - 21 to 28 inches: very gravelly sandy loam
H5 - 28 to 40 inches: very cobbly sandy loam
H6 - 40 to 44 inches: unweathered bedrock

Properties and qualities

Slope: 5 to 30 percent
Depth to restrictive feature: 40 to 60 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 5.0
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: R029XY330UT - Upland Stony Loam (Shrub Liveoak)
Hydric soil rating: No

Minor Components

Tacan

Percent of map unit: 5 percent

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APPENDIX E. SITE PHOTOS

Photo 1. Existing two-track road.

Photo 2. Newer fence along existing two-track.

Photo 3. Pinyon-juniper woodland and sagebrush.

Photo 4. Proposed location of new road section.

Photo 5. Looking south towards New Harmony.

Photo 6. Drainage in proposed new road section.